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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,529	03/13/2001	Akira Shiokawa	NAK1-BO21	2114

21611 7590 04/13/2006

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EXAMINER

NGUYEN, JIMMY H

ART UNIT PAPER NUMBER

2629

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/805,529	<b>Applicant(s)</b> SHIOKAWA ET AL.	
	<b>Examiner</b> Jimmy H. Nguyen	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5-11,17-20,22,23,25,27-34,39 and 40 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-20,22 and 33 is/are allowed.
- 6) ☒ Claim(s) 2,3,5-11,23,25,27-32,34,39 and 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 02/03/2006.

Claims 2, 3, 5-11, 17-20, 22, 23, 25, 27-34, 39 and 40 are currently pending in the application.

An action follows below:

#### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features, the feature, "a potential of the second electrode relative to the first electrode **alternates in polarity**" presently recited in independent claims 2, 7, 29, 31, 32 and 34, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

3. The disclosure is objected to because of the following informalities: the amended paragraph on page 15 beginning on line 5 (see the amendment, page 3) is accidentally added “with alternating polarity” immediately after “sustain pulses” on the first line of the paragraph, so that the amended paragraph and the original paragraph are substantially identical. Accordingly, the amended paragraph is not consistent with drawings, specifically fig. 4 which shows the discharge sustain pulses applied to scan electrodes 19a and sustain electrodes 19b with the same positive polarity.

Appropriate correction is required.

### *Claim Objections*

4. Claim 2 is objected to because of the following informalities: “a potential of the second electrode relative to the first electrode” in lines 9-10 and “a potential generated between the first electrode and the second electrode” in lines 15-16 should be the same in order to clarify the claimed invention. Further, it is suggested that the mentioned feature should be changed to -- a potential difference between the first and second electrodes --, so as to make the claimed feature consistent with the disclosure, see Fig. 15, the bottom waveform. Appropriate correction is required.

5. Claim 7, 29, 31, 32 and 34 are objected for the same reason as set forth in claim 2 above. Additionally to claim 7, “ore” in last line should be changed to – more – because of a typo. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2, 3, 5-11, 29-32, 34, 39 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims above, it is not clear what the applicant means the claimed feature, “a short pulse, which is opposite in polarity to a potential generated between the first electrode and the second electrode by the sustain pulse, is formed between the first electrode and the second electrode, ... 100ns”, presently recited in independent claims 2, 7, 29, 31, 32 and 34, e.g., see last 3 lines of claim 2. Since Fig. 15 shows that a short pulse having an absolute magnitude of V1 is a part of a potential difference generated between the first electrode and the second electrode, it is not clear how a short pulse of a potential difference is opposite in polarity to a potential generated between the first electrode and the second electrode by the sustain pulse.

Additionally, to claim 40, this claim recites the driving circuit applying a plurality of sustain pulses alternately to the first and second electrodes (see lines 2-3) and further recites the sustain pulse being not applied to one of the first and second electrodes (see lines 4-5), so that it is not clear the applicant claims the sustain pulse being or being not applied to one of the first and second electrodes.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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9. Claims 2, 3, 5-11, 27-32, 34, 39 and 40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 2, 3, 5-11, 29-32, 34, 39 and 40, the disclosure, when filed, does not fairly convey to one of ordinary skill in the art that applicants had in their possession the claimed features, “a potential of the second electrode relative to the first electrode alternates in polarity” and “a short pulse, which is opposite in polarity to a potential generated between the first electrode and the second electrode by the sustain pulse”, as presently recited in independent claims 2, 7, 29, 31, 32 and 34, which were not described in the original disclosure when filed. The original disclosure, e.g., Fig. 15, expressly discloses a waveform of a potential difference between electrodes comprising a pulse having a positive amplitude (V2) and a short pulse having a positive amplitude (V1), which do not alternate in polarity, and a short pulse having a positive amplitude (V1) having the same polarity with the sustain pulse having a positive amplitude (V2). Accordingly, these claims contain the above underlined features, which were not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Additionally, to claims 39 and 40, the original disclosure does not teach that, immediately before the leading edge of each sustain pulse, the driving circuit applies a short pulse of a same polarity as the sustain pulse to the scanning electrode (19a) (assuming the second electrode being the scanning electrode). See Fig. 15.

As per claims 27, 28 and 30, the disclosure, when filed, does not fairly convey to one of ordinary skill in the art that applicants had in their possession the claimed features, “the driving circuit **forms** a first voltage ... and **forms** a second voltage ... the first” recited in lines 9-13 of claim 27, “the driving circuit **forms** the first and second voltages ... second electrode” recited in lines 1-4 of claim 28, and “the driving circuit **forms** the short pulse ... second electrode” recited in lines 1-5 of claim 30, which were not described in the original disclosure when filed. The original disclosure, see Fig. 16, 22, 23, or 24 and the corresponding description, expressly discloses a scan driver (104) **applying a voltage** to the scanning electrode (19a) and the sustain driver (105) **applying a voltage** to the sustain electrode (19b), thereby virtually forming a potential difference between the scan electrode and the sustain electrode. A person of ordinary skill in the art would recognize that, without the scan electrode, the sustain electrode, and other features to form a discharge cell, a first voltage, a second voltage, or a short pulse can’t be formed. Further, there is nowhere in the original disclosure to teach a driving circuit **forming** a first voltage, a second voltage, or a short pulse, as presently claimed. Accordingly, these claims contain the above underlined features, which were not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

10. It is noted Applicants that due to the rejections under 35 USC 112, first and second paragraphs above, the following art rejections are based as best understood by the Examiner.

***Claim Rejections - 35 USC § 102***

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11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 2, 7, 23, 25, 29-32, 34, 39 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitkoshiba et al. (US 6,456,265 B1), hereinafter Mikoshiba.

As per claims 2, 7, 31 and 32, the claimed invention reads on Mikoshiba as follows:

Mikoshiba discloses a panel display apparatus and an associate method for displaying an image in a discharge sustain period, the apparatus comprising a discharge panel (a plasma display panel, see col. 6, line 24) including a plurality of pairs of first electrodes (common electrodes 3, see Fig. 8A) and second electrodes (scanning electrodes 2, see Fig. 8A) covered with a dielectric (a dielectric layer 7, see Fig. 8A); and an inherent driving circuitry for applying a write pulse (scanning pulse 24, see col. 4, lines 11-14, also fig. 3) to selected discharged cells to accumulate a wall charge on the dielectric to write an image and for successively applying a plurality of sustain pulses (18a, 18b) to scanning electrodes and common electrodes (see Fig. 14), so that a potential difference between the second and the first electrodes alternates in polarity (the potential difference between the scan electrode 2 and the sustain electrode 3 during a sustain period can be obtained by subtracting the common electrode signal 13 from the scanning electrode signal 12 during the sustain period, see Fig. 14). Mikoshiba also teaches that immediately before a leading edge of each sustain pulse (18b) applied to first (common) electrode (3), the driving circuit applies a voltage to the first (common) electrode (3), so that a



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short pulse (26), which is opposite in polarity with the adjacent sustain pulse (18b), is formed between the first (common) electrode (3) and the second (scanning) electrode (2). Mikoshiba further discloses the short pulse (26) applied immediately before a leading edge of each sustain pulse (18b) for a predetermined period of 40ns (see fig. 14, col. 7, lines 45-48) or 100ns (see col. 7, lines 50-62), which depends on the panel structure and physical characteristics of the display apparatus (see col. 9, lines 17-23). Accordingly, the elements and the steps in these claims are read in the Mikoshiba reference.

As per claims 23, 25, 29, 30, 34, 39 and 40, the claimed invention reads on Mikoshiba as follows: Mikoshiba discloses a panel display apparatus and an associate method for displaying an image in a discharge sustain period, the apparatus comprising a discharge panel (a plasma display panel, see col. 6, line 24) including a plurality of pairs of first electrodes (common electrodes 3, see Fig. 8A) and second electrodes (scanning electrodes 2, see Fig. 8A) covered with a dielectric (a dielectric layer 7, see Fig. 8A); and an inherent driving circuitry for applying a write pulse (scanning pulse 24, see col. 4, lines 11-14, also fig. 3) to selected discharged cells to accumulate a wall charge on the dielectric to write an image and for successively applying a plurality of sustain pulses (18a, 18b) to scanning electrodes and common electrodes (see Fig. 14), so that a potential difference between the second and the first electrodes alternates in polarity (the potential difference between the scan electrode 2 and the sustain electrode 3 during a sustain period can be obtained by subtracting the common electrode signal 13 from the scanning electrode signal 12 during the sustain period, see Fig. 14). By virtue of the potential difference between the scan electrode 2 and the sustain electrode 3 during a sustain period, Mikoshiba also teaches that immediately after a trailing edge of each sustain pulse (18), the

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driving circuit applies a short pulse that is opposite in polarity with the adjacent sustain pulse (18). Mikoshiba further discloses the short pulse (26) being applied for a predetermined period of 40ns (see fig. 14, col. 7, lines 45-48) or 100ns (see col. 7, lines 50-62), which depends on the panel structure and physical characteristics of the display apparatus (see col. 9, lines 17-23). Accordingly, the elements and the steps in these claims are read in the Mikoshiba reference.

***Allowable Subject Matter***

13. Claims 17-20, 22 and 33 are allowed.

***Response to Arguments***

14. Applicant's arguments with respect to the rejections under 35 USC 102 and 103(a) in the Office Action dated 11/01/2005, see pages 22-24 of the amendment filed 02/03/2006, have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's arguments filed with respect to specification objection in the office Action dated 11/01/2005, see page 19-20 of the amendment, have been fully considered but they are not persuasive. Applicants assert that Fig. 4 showing all of the sustain pulses alternating in polarity by indicating a short pulse being a sustain pulse. Examiner disagrees because a short pulse of Fig. 4 is not a sustain pulse.

16. Applicant's arguments filed with respect to drawing objection in the office Action dated 11/01/2005, see page 20 of the amendment, have been fully considered but they are not persuasive. Applicants assert that a driving circuit 105 corresponding to the claimed driving circuit of claims 1, 2, 7, 17-19, 23 and 25. Examiner disagrees because the claimed driving circuit, e.g., of claim 2, accumulates a wall charge on the dielectric to write an image and applies sustain pulses to the scan electrodes (first or second electrodes), while the driving circuit 105

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can't accumulate a wall charge on the dielectric to write an image and can't apply sustain pulses to the scan electrodes. In other words, the driving circuit 105 of Fig. 5 does not correspond to the claimed driving circuit.

17. With respect to the claim objection to claim 35, the rejection under 35 USC 112, second paragraph to claims 35-38, and the rejection under 35 USC 112, first paragraph, to claims 1-3, 5-14, 17-20, 22, 23, 25 and 27-38, see page 21 of the amendment, these objection and rejections are moot in light of the claim cancellation and amendment to the claims.

### ***Conclusion***

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675.


The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN  
April 10, 2006



Jimmy H. Nguyen  
Primary Examiner  
Technology Division: 2629

# REPLACEMENT SHEET

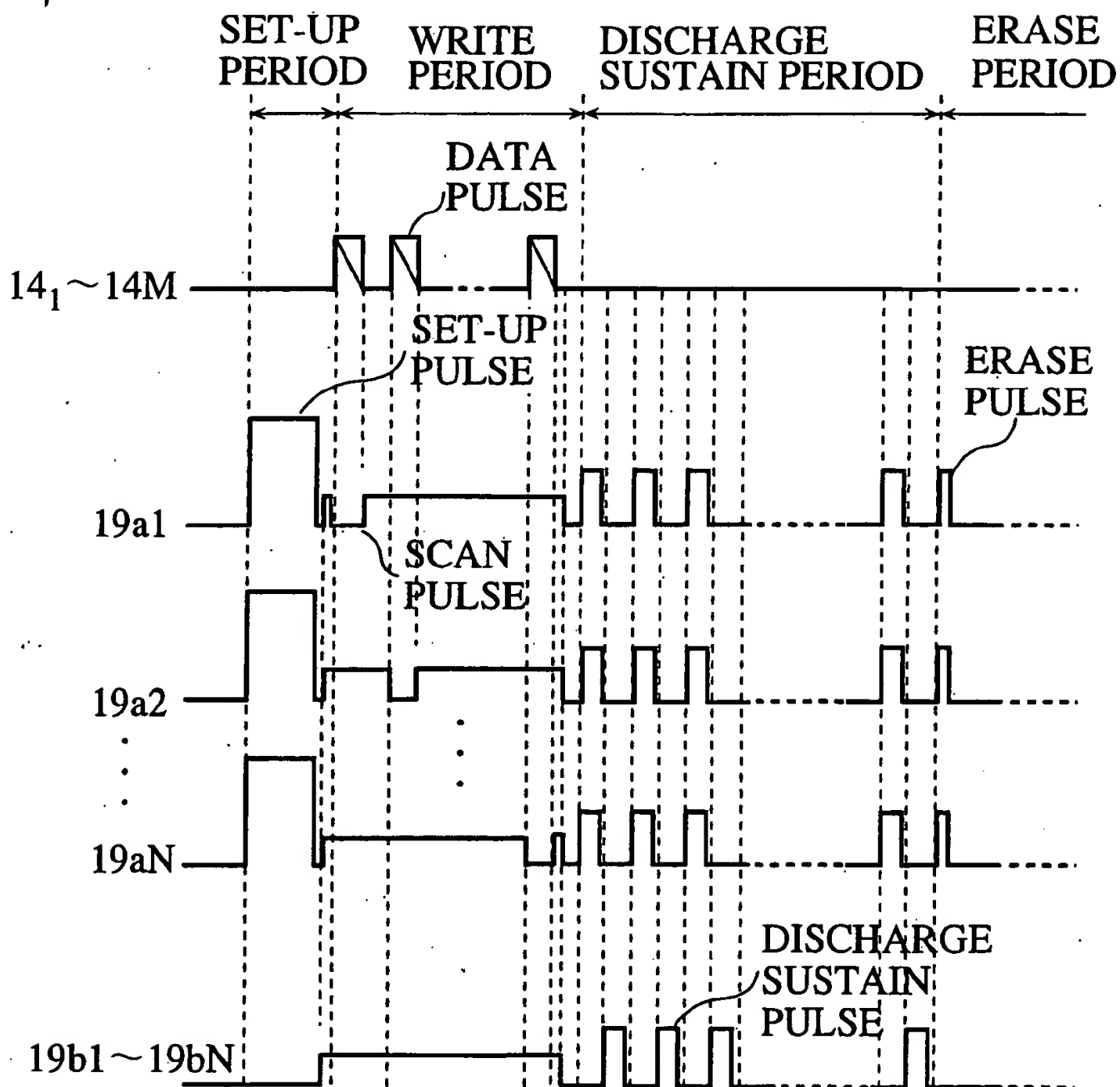
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FIG. 25

Approved by  
JHW  
04/24/04



PRIOR ART